

In the consumer products field, Toshiba is providing customers with choices for ecological lifestyles based on the ecostyle™ concept in this era of growing diversification of lifestyles. We supply user-friendly, energy-saving, and environmentally conscious products in response to customers' needs.

### TW-5000VF/4000VF Energy-Conserving Drum-Type Washer-Dryers



TW-5000VF

TW-4000VF

TW-5000VF/4000VF heat-pump hybrid drum-type washer-dryers

Toshiba Home Appliances Corporation has released two energy-conserving drum-type washer-dryers, the TW-5000VF heat-pump air-conditioning hybrid drum type and the TW-4000VF heat-pump hybrid drum type.

The control technology based on an original pulse motor valve (PMV) mechanism has been further advanced, achieving optimal driving performance and high drying efficiency with lower power consumption.

The main features are as follows:

- Power consumption from washing to drying is reduced to about one-third that of the TW-130VB heater type.
- Water consumption is reduced by about 55% compared with the AW-E80HVP automatic type by using a water shower for rinsing.
- A two-stage switching air-conditioning function and a timer for setting the starting time of operation are incorporated (TW-5000VF).
- The weight is reduced to 89 kg (6% less) and the height to 103 cm (5 cm lower), making installation possible in a smaller space (TW-4000VF), due to miniaturization of the compressor, heat exchanger, and other components compared with our former type.

### GR-A51R Cool-In-One Freshness-Preserving Refrigerator



GR-A51R refrigerator

Toshiba Home Appliances Corporation has released a freshness-preserving refrigerator, the GR-A51R, which features an original “cool-in-one” design style to preserve the freshness of whole vegetables anywhere in the refrigerator.

The GR-A51R has been developed for the most popular 685 mm (27-inch) width range market, and offers both excellent energy-saving performance and large capacity.

The main features are as follows:

- Intelligent-twin (i-twin) cooling system  
An advanced twin-cooling system is incorporated that provides two coolers—one each for the refrigerator and freezer—allowing effective individualized temperature control. This system maintains high humidity of about 85%, helping to preserve the freshness and taste of vegetables without the need for plastic wrap.
- Industry's leading energy-saving design  
Thanks to the i-twin cooling system, vacuum insulation panels, and “cool-in-one” style, a power consumption of 380 kWh/year is achieved.
- Deodorizing and bacteria elimination by “platinum-plus unit”  
The “platinum-plus unit” uses ozone, ultraviolet rays, and hydroxyl radicals to eliminate airborne bacteria and dissolve odors.
- “Cool-in-one” style  
This original design style realizes a large-capacity refrigerator in which the contents are easily viewable and more accessible, with a freshness-preservation function that reduces food wastage.

## VC-1000X/2000X Quie™ Series Cyclone Vacuum Cleaners

Toshiba Home Appliances Corporation has developed the VC-1000X/2000X Quie™ series cyclone vacuum cleaners.

The VC-1000X/2000X models have achieved the quietest operation of products in this category on the market<sup>(\*1)</sup> by incorporating the Quie™ vibration control mechanism in addition to the Typhoon Robo™ continuous suction mechanism, which has been well-received by customers. The silent operation of these models allows them to be used anytime without hesitation.



VC-2000X Quie™ cyclone vacuum cleaner with high cleaning capability

The main features are as follows:

- Vibration reaching the main body has been reduced to about 1/25 that of our former model<sup>(\*2)</sup> by the use of springs in the motor supports. Furthermore, silent operation at around the 49 dB level is achieved by reducing the exhaust noise through the use of sound-absorbing material inside the exhaust duct.
- The reaction time for reversing the rotator of the floor brush has been improved by adopting a new rotation sensor. In addition, power consumption has been reduced by 28% and carbon dioxide emissions by about 22 kg<sup>(\*3)</sup> (VC-2000X) compared with our former model by incorporating a new control system that reduces the input power of the motor when the floor brush motion stops.
- The ultra-high-performance filter removes almost 100% of microscopic dust having a particle size of 0.3 μm or more (VC-2000X).
- The “plasma ozone unit” eliminates fungi and unpleasant odors by circulating an ozone airflow through the main body each time the operation stops after cleaning.
- The 360-degree swivel hose improves the maneuverability of the main body.

(\*1) As of August, 2008 (as researched by Toshiba)

(\*2) VC-75TC model

(\*3) Comparing the VC-2000X (ECO AUTO mode) with our former VC-M9D model (AUTO mode)

## NEW “Super Daiseikai” Residential-Use Inverter Type Air Conditioner for the European Market

In March 2009, Toshiba Carrier Corporation launched the new “Super Daiseikai” residential-use inverter type air conditioner for Europe.

The main features are as follows:

- The “plasma ion charger” and the indoor heat exchanger coated with aqua resin realize a maintenance-free air purifier. Dust is ionized and absorbed on the indoor heat exchanger by the plasma ion charger, and washed away by condensate water.
- The dual-stage compressor realizes a wide capacity control range by switching from two-cylinder drive to single-cylinder drive, providing excellent operating efficiency at medium load or less.
- A Nordic model has been added to the product lineup, featuring a drain line cord heater on the base plate of the outdoor unit for cold regions and an indoor fan motor with ceramic ball bearings for prolonged operation.

The base model of this air conditioner is the Daiseikai PDR series, which won the ECCJ Chairman’s Prize at the 19th Energy Conservation Grand Prize Awards for 2008 in January 2009.

ECCJ: The Energy Conservation Center, Japan



Indoor unit



Outdoor unit

## E-CORE™ Series Self-Ballasted LED Lamps



Two types of self-ballasted LED lamps released in 2008

Toshiba Lighting & Technology Corporation has developed two types of E-CORE™ series light-emitting diode (LED) lamps, a 100 W bulb type LED beam lamp and a 60 W bulb type LED midget reflector lamp, which can replace conventional incandescent beam lamps and midget reflector lamps.

The main features are as follows:

- The 100 W LED beam lamp has a power consumption of 9 W and a rated lamp life of 20 000 hours. It reduces power consumption to about 1/8 and has a three times longer lifetime compared with a conventional incandescent beam lamp, yet it is of comparable size and has almost the same photometric characteristics as the incandescent type. It can be used outdoors.
- The 60 W LED midget reflector lamp has a power consumption of 5.3 W and a rated lamp life of 20 000 hours, representing about 1/11 the power consumption and about 13 times the lifetime of a conventional incandescent lamp while maintaining almost identical photometric characteristics.

These LED lamps were also awarded the ECCJ Chairman's Prize at the 19th Energy Conservation Grand Prize Awards for 2008.

### Specifications of the self-ballasted LED lamps

Type	Color temperature (K)	Diameter (mm)	Overall length (mm)	Base	Supply voltage (V)	Power consumption (W)	Initial lumens (lm)	Beam intensity (cd)	Beam angle (°)	Life-time (hours)
100 W LED beam lamp (PAR 38)	2 800	121	135	E26	100	9	435	1 600	30	20 000
	5 000	121	135	E26	100	9	595	2 180	30	20 000
60 W LED midget reflector lamp	2 800	66	101	E26	100	5.3	260	290	55	20 000
	5 000	66	101	E26	100	5.3	360	400	55	20 000

## LED Streetlight

White LEDs can provide an environment-friendly, energy-saving, and long-life lighting source, making them a focus of expectations as new lighting devices for the next generation. The lighting efficiency of LEDs has recently been improved, allowing extension of their application to outdoor use where high light intensity is required. Moreover, since outdoor lighting apparatus is often installed in high positions and maintenance is difficult to perform, long life and reduction of maintenance are desirable.

Toshiba Lighting & Technology Corporation has developed a high-efficiency LED streetlight that realizes savings in both energy consumption and maintenance. The newly developed LED streetlight has the following features:

- Optical design to provide the required lighting performance with the same number of streetlights as previously installed
  - Mercury free
  - Economical operation due to low power consumption (reduced by 70%)
  - Maintenance free due to the long life of the LED, three times longer than that of an HID lamp
- Furthermore, a production lineup of multipurpose outdoor apparatus for wide-ranging applications such as outdoor ceiling lighting and bracket lighting can be realized using the same LED lighting unit, diffusing cover, and other metal fittings.

HID: High-intensity discharge



LED streetlight



LED outdoor luminaire for a variety of applications